TOX®-Servocontroller

General data and operating conditions

The central intelligence: The freely parameterizable servo controller is a single-axis servo controller with integrated logic.

It controls and regulates the TOX®-ElectricDrive system with all required functions. Benefits are the immediate processing of process data and a direct response to their deviations. The process data can be viewed during and after production for a complete quality certificate, and documented accordingly.

The modules can be easily replaced by means of the plug-in system

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**Operating conditions**

<table>
<thead>
<tr>
<th>Circuit type</th>
<th>With grounded star-circuit</th>
<th>Unlimited use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IT-net</td>
<td>Follow instructions for special measures!</td>
</tr>
</tbody>
</table>

**Standards**

- Conformity: CE
- Low voltage directive (2006/95/EC)

**Approvals**

- UL 508C
- Power Conversion Equipment (File-No. 32659)

**Enclosure**

<table>
<thead>
<tr>
<th>Enclosure type</th>
<th>EN 60529</th>
<th>IP20</th>
<th>NEMA 250</th>
<th>Contact protection according to type 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety module</td>
<td>c*Not in the connecting area of the motor side connectors.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Climatic conditions**

- **Operation**
  - IEC/EN 60721-3-3  EN 50178  3K3 (-10 ... +55°C) Derating of rated output current +45 ... +55°C: 2.5%/°C

- **Relative air moisture**
  - max. 85%, without condensation

*Attention: In case of an installation at 1000 m above sea level the reduction of the nominal current will be 5% / 1000 m.
For TOX®-ElectricDrive-systems up to 10 kN press force

**Dimensions**

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>b1</th>
<th>e</th>
<th>f</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>481</td>
<td>350</td>
<td>288</td>
<td>348</td>
<td>5.3</td>
</tr>
</tbody>
</table>

**Notes:**
- Mounting plate existing (comes with the switch cabinet)
- Built-in depth of switch cabinet: 400 mm
- Dimensions of ballast resistor W/H/D: T / H / B 30 / 60 / 355 mm

* Mounting plate existing (comes with the switch cabinet)
TOX®-Servocontroller

For TOX®-ElectricDrive-systems 25 - 100 kN press force

Dimensions

<table>
<thead>
<tr>
<th>Type</th>
<th>a</th>
<th>b</th>
<th>b1</th>
<th>e</th>
<th>f</th>
<th>Weight</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQ-K</td>
<td>90</td>
<td>481</td>
<td>350</td>
<td>288</td>
<td>348</td>
<td>8.1</td>
<td></td>
</tr>
<tr>
<td>EX-K</td>
<td>120</td>
<td>481</td>
<td>350</td>
<td>288</td>
<td>348</td>
<td>8.1</td>
<td></td>
</tr>
</tbody>
</table>

* Mounting plate existing (comes with the switch cabinet)
- Built-in depth of switch cabinet: 400 mm
- Dimensions of ballast resistor W/H/D: T/H/B 30/60/355 mm
For TOX®-ElectricDrive-systems 200 - 700 kN press force

* Mounting plate existing (comes with the switch cabinet)
- Built-in depth of switch cabinet: 400 mm
- Dimensions of ballast resistor W/H/D: T/H/B 30 / 60 / 355 mm

**Dimensions**

<table>
<thead>
<tr>
<th>Type</th>
<th>a</th>
<th>b</th>
<th>b1</th>
<th>b2</th>
<th>e</th>
<th>c1</th>
<th>d</th>
<th>g</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>E94ASxE0324</td>
<td>206</td>
<td>606</td>
<td>556</td>
<td>630</td>
<td>294</td>
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<td>6.5</td>
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</tr>
</tbody>
</table>
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Wiring diagram

Block diagram
Use of the TOX®-ElectricDrive system.
Simplified diagram.

Ballast-resistor

Standard interface, Profibus

Emergency switch button light grille/protective door

approx. 150 – 500 ms delay
Safety category 3

Emergency switch

Emergency switch box with a delay of approx. 150 – 500 ms as per risk analysis and afterrunning test

Servocontroller

X105

X105

MX1

MXI1

MSI

X3

X7

X105

E/S

Ethernet, programming, process data

Force sensor

Resolver

Motor

Control, digital, PLC

green: Scope of delivery TOX®-ElectricDrive Set

red: supplied by customer

Subject to technical modifications.